



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

09/343,092  
APPLICATION NUMBER FILING DATE FIRST NAMED APPLICANT ATTY. DOCKET NO.  
09/343,092 06/30/99 SAMURA

09/343,092 06/30/99 SAMURA

EXAMINER  
H 51857 648

MODERMOTT WILL & EMERY  
600 13TH STREET NW  
WASHINGTON DC 20005-3096

MHC2/0621

ART UNIT PAPER NUMBER  
DICKENS, C 7

DATE MAILED:

06/21/00

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

### OFFICE ACTION SUMMARY

☒ Responsive to communication(s) filed on 10-21-99

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire \_\_\_\_\_ month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

### Disposition of Claims

- ☒ Claim(s) 1-3 is/are pending in the application.  
Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
☐ Claim(s) \_\_\_\_\_ is/are allowed.  
☒ Claim(s) 1-3 is/are rejected.  
☐ Claim(s) \_\_\_\_\_ is/are objected to.  
☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

### Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.  
☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.  
☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.  
☒ The specification is objected to by the Examiner.  
☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

- ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).  
☒ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.  
☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_  
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

- ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

- ☒ Notice of Reference Cited, PTO-892  
☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) 5  
☐ Interview Summary, PTO-413  
☒ Notice of Draftsperson's Patent Drawing Review, PTO-948 approved 6/30/99 Drawings  
☐ Notice of Informal Patent Application, PTO-152

-SEE OFFICE ACTION ON THE FOLLOWING PAGES-

BEST AVAILABLE COPY

**DETAILED ACTION**

This is the first Office Action for serial number 09/343,092,  
Line Head For Ink Jet Printer, filed 6/30/99.

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Drawings***

2. The drawings filed on 6/30/99 have been approved by the Draftsperson.

***Specification***

3. The disclosure is objected to because of the following informalities: of the references to the claims in the "Summary of the Invention" should be removed. Appropriate correction is required.
4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The recitations "a silicon substrate", "a substrate" and "a thin film of ferroelectric substance" all lack positive recitations in claims 1 and 3 respectively.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada in view of JP 10-86365.

Shimada discloses the claimed invention essentially, including: ink nozzles 210, ink passages 204, ink chambers 203 and piezoelectric element 208.

However, Shimada does not disclose the use of a thin film of ferroelectric substance. JP 10-86365 discloses a piezoelectric element of ferroelectric substance (abstract) for the purpose of making handling easier and increasing the surface smoothness of ferroelectric substances. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a piezoelectric element of ferroelectric substance in Shimada as taught by JP 10-86365 for the purpose of making handling easier and increasing the surface smoothness of ferroelectric substances.

Regarding to the method of forming the ferroelectric substance the modified Shimada is suggestive of the claimed limitation due to the sol-gel and/or sputtering processed disclosed. It is also noted that the applicant has not given any criticality for the claimed method and the claimed method is one of three preferred methods the applicant discloses in the instant application.

***Pertinent Prior Art***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bartky et al.

and Paton disclose the use of multi-layered piezoelectric elements. Gururaja et al., Etsuko et al. and Koji all disclose the use of ferroelectric elements.

**Contact Information**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Dickens whose telephone number is (703) 305-7047. Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-0956. The fax numbers are (703) 305-3431 and (703) 305-3432.



cd/dickens  
June 17, 2000



John Barlow  
Supervisory Patent Examiner  
Technology Center 2800